

Claims

1. Process for preparing a polyurethane material in a mould in which process the following steps are conducted :

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1. an external mould release agent is applied onto at least those surfaces of the mould which will be in contact with the ingredients used for preparing the polyurethane material and/or the finished polyurethane material;
2. the ingredients to be used for preparing the polyurethane material are fed  
10 into the mould;
3. the ingredients are allowed to react and to form the polyurethane material;
4. the polyurethane material so formed is removed from the mould and
5. steps 2,3 and 4 are repeated at least 10 times without repeating step 1,  
15 wherein at least 25% by weight of the ingredients used to make the polyurethane material, excluding water in this calculation if used, consist of polyether polyol having an average nominal functionality of 2-6, an average equivalent weight of 500-5000 and an oxyethylene content of at least 50% by weight.

- 20 2. Process according to claim 1 wherein steps 2, 3 and 4 are repeated at least 15 times without repeating step 1.

3. Process according to claim 1 wherein steps 2, 3 and 4 are repeated at least 25 times without repeating step 1.

- 25*  
*I use* 4. Process according to claims 1-3 wherein a flexible polyurethane foam is prepared comprising reacting a polyisocyanate, the polyether polyol and water.

sub A<sup>2</sup> >  
cont.

- 5 5. Process according to claims 1-3 wherein the ingredients comprise : 1) an isocyanate-terminated, urethane-containing prepolymer made by reacting an excessive amount of a polyisocyanate containing at least 65% by weight of 4,4'-diphenylmethane diisocyanate or a variant thereof with a polyoxyethylene polyoxypropylene polyol having a number average nominal functionality of 2-4, a number average equivalent weight of 750-2500 and an oxyethylene content of 60-90% by weight, the prepolymer having an NCO value of 3-15% by weight; and 2) water.
- 10 6. Process according to claims 4-5 wherein the amount of water is 0.8-5% by weight calculated on all ingredients used.
- 15 7. Process according to claims 4-6, wherein the amount of the polyether polyol having at least 50% by weight of oxyethylene groups is at least 50% by weight calculated on all ingredients used.
8. Process according to claims 4-7 wherein the reaction is conducted at an NCO index of 40-150.
- 20 9. Process according to claim 8 wherein the index is 70-110.

sub A<sup>3</sup> >

10. Process according to claims 1-9 wherein step 1 is repeated after one week.
11. Process according to claims 1-9 wherein step 1 is repeated after 24 hours.
- 25 12. Process according to claims 1-9 wherein step 1 is repeated after 8 hours.

13. Moulded flexible polyurethane foam having an apparent overall density of 55-150 kg/m<sup>3</sup>, a vibration transmissibility at resonance frequency of 1.5-3.2, a resonance frequency of at most 3.5 Hz, and a hardness (ILD of 25%) of 15-25 kg and comprising oxyethylene and oxypropylene groups in a weight ratio of 1:1 to 8:1 and oxyethylene groups in an amount of 25-80% by weight calculated on the weight of the foam.

14. Foam according to claim 13 wherein the density is 55-100 kg/m<sup>3</sup>, the resonance frequency is between 2.6 and 3.4 Hz, the vibration transmissibility at 6 Hz is less than 1, the resilience is at least 50% and the amount of oxyethylene groups is 35-75% by weight.

sub A<sup>4</sup> 15. Foam according to claims 13-14 wherein the vibration transmissibility at 6 Hz is 0.3-0.9 and the resilience is 55-80%.

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